

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-134. (Cancelled)

135. (Previously presented) An isolated nucleic acid comprising:

- (a) a nucleotide sequence encoding a CatSper1 protein comprising SEQ ID NO: 2; or
- (b) the nucleotide sequence complementary to the nucleotide sequence of (a).

136. (Cancelled)

137. (New) The isolated nucleic acid of claim 135, wherein said nucleotide sequence encoding a CatSper1 protein comprises SEQ ID NO: 1.

138. (New) The isolated nucleic acid of either claim 135 or claim 137, further comprising: a heterologous regulatory region operably joined to said sequence.

139. (New) A kit for detecting a CatSper1 nucleic acid comprising a container comprising: an isolated nucleic acid of either claim 135 or claim 137; and a means for detecting said isolated nucleic acid.

140. (New) The kit of claim 139, wherein said means for detecting said isolated nucleic acid comprises a detectable label bound thereto.

141. (New) The kit of claim 139, wherein said means for detecting said isolated nucleic acid comprises a labeled secondary nucleic acid which specifically hybridizes to said isolated nucleic acid.

142. (New) A vector comprising an isolated nucleic acid of either claim 135 or claim 137.

143. (New) A vector comprising an isolated nucleic acid of claim 138.
144. (New) An expression vector comprising a genetic construct capable of expressing a nucleic acid of either claim 135 or claim 137.
145. (New) The vector of claim 144, wherein said nucleic acid is operably joined to a heterologous regulatory region.
146. (New) The vector of claim 144, wherein said nucleic acid is operably joined to heterologous coding sequences.
147. (New) A vector comprising an isolated nucleic acid of either claim 135 or claim 137 operably joined to a reporter gene.
148. (New) An isolated cell transformed with the nucleic acid of either claim 135 or claim 137.
149. (New) An isolated cell transformed with the nucleic acid of claim 138.
150. (New) An isolated cell transformed with the vector of claim 142.
151. (New) An isolated cell transformed with the vector of claim 143.
152. (New) An isolated cell transformed with the vector of claim 144.
153. (New) An isolated cell transformed with the vector of claim 145.
154. (New) An isolated cell transformed with the vector of claim 146.

155. (New) An isolated cell transformed with the vector of claim 147.
156. (New) The isolated cell of claim 148, wherein
said cell is selected from the group consisting of bacterial cells, yeast cells, insect cells,
nematode cells, amphibian cells, rodent cells, and human cells.
157. (New) The isolated cell of claim 148, wherein
said cell is selected from the group consisting of mammalian somatic cells, fetal cells,
embryonic stem cells, zygotes, gametes, germ line cells, and transgenic animal cells.